

Beyond Tomorrow

Laying the Foundation for Washington's Transportation Future

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Senate Transportation Committee

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Agenda

- Challenges today; and opportunities for the future
- Where will we be in 40 years?
- Washington transportation policy goals
- Policy goals and appropriations
- Working with partners
- What's next?





Transportation Matters

Economy

- Washington is one of the most trade-centric states in the nation

Quality of life

- Affordable housing
- Public health
- Access to nature, recreation

Social equity

- Percentage of family income spent on transportation highest for the least well off
- Approximately 20% of Washingtonians don't hold a driver's license
- Transit and active transportation investments provide access to opportunity

THE STATE'S TRANSPORTATION NETWORK IS A CONNECTED SYSTEM THAT MUST
SERVE MANY MODES AND USERS



18,700
Highway lane miles
308
HOV lane miles



16
WSDOT-operated airports



3,344
state-owned bridges



125*
miles dedicated bike lanes
405*
miles of sidewalk within/adjacent
to WSDOT right-of-way



22
Ferries
24.3 million
passengers per year



333
miles Amtrak Cascades



32
Transit systems

802,000
annual passengers

298
miles WSDOT-owned shortline
freight railroad

*Most sidewalks/bike lanes are controlled by local jurisdictions

Challenges today; opportunities for the future

- Washington has transportation challenges, including:
 - Initiative 976
 - Over 10 deaths weekly on our transportation system
 - State of Good Repair
 - Cascadia Subduction Zone earthquake
 - Federal treaty obligations regarding fish passage
- With these challenges comes an opportunity to rethink how we prioritize, program and fund investments to the system to:
 - Become better stewards of the entire transportation system
 - Go beyond addressing immediate wants and needs
 - Build a long-term vision for the future with the people we serve
- First, some short-term recommendations...



Responding to I-976

In response to I-976 and resulting cuts to transportation revenue sources

- Governor Inslee directed WSDOT to postpone projects not yet underway
- Delaying obligation of funds, WSDOT provides Governor and Legislature more funding flexibility while determining how to amend 2019-21 transportation budget to implement I-976 during the legislative session

Delayed projects include:

- Construction projects that add capacity to the transportation system scheduled to go out to advertisement in the next six months (including any unexecuted consultant agreements related to these projects)
- State funded local agency projects with no executed agreement or projects that have a portion of the funds not under agreement
- Rail grant projects with no executed agreements
- Public Transportation grant projects with no executed agreement and/or no purchase order of equipment or vehicles have yet been placed

Other short-term Recommendations

Deaths and serious injuries on Washington's transportation system

- Invest in safe facilities for people who walk and bike
- Invest in low-cost enhancements proven to enhance safety
- Invest in Cooperative Automated Transportation infrastructure

State of Good Repair

- Invest in preservation now, or accept reduction in service levels and pay more later

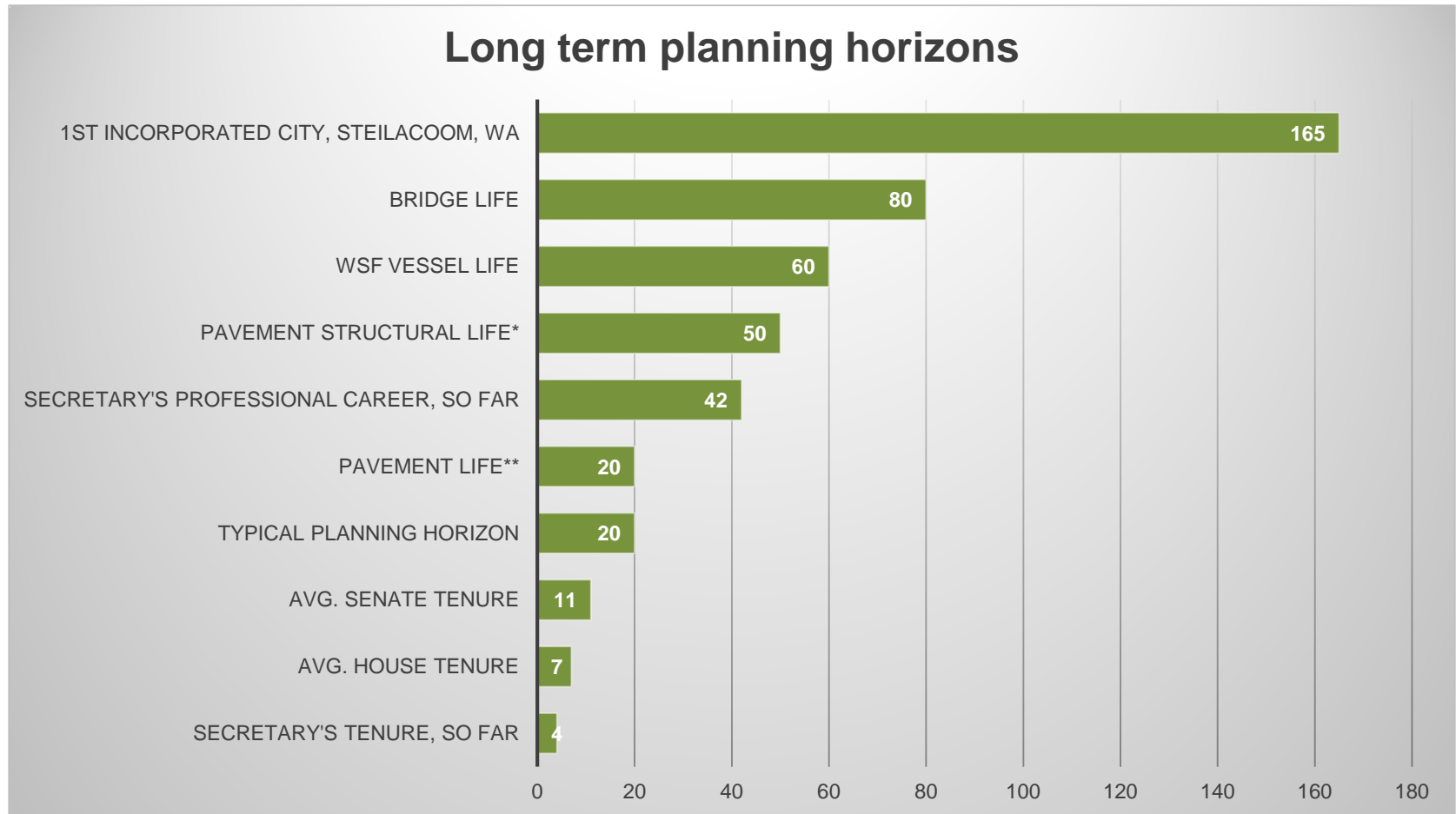
Cascadia subduction earthquake

- Invest in seismic retrofit for lifeline routes and facilities

Fish passage

- \$275 million for 2019-21 – design and construction work is needed to keep projects on target to meet injunction's 2030 requirement
- Compliance achievable with legislative direction on funding this session for current and subsequent biennia – much more needed over next 10 years

Where will we be 40 years from now?

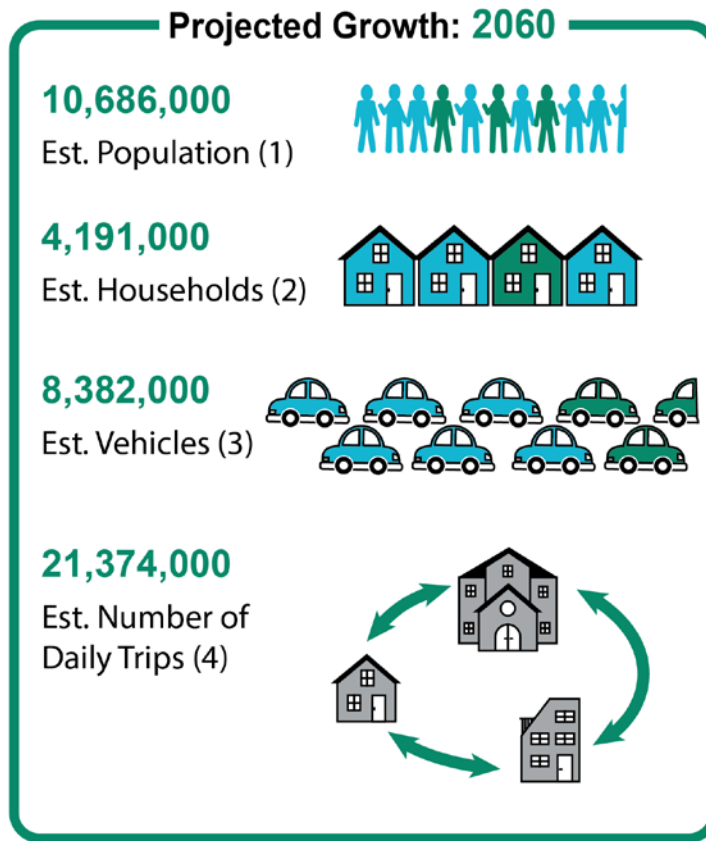
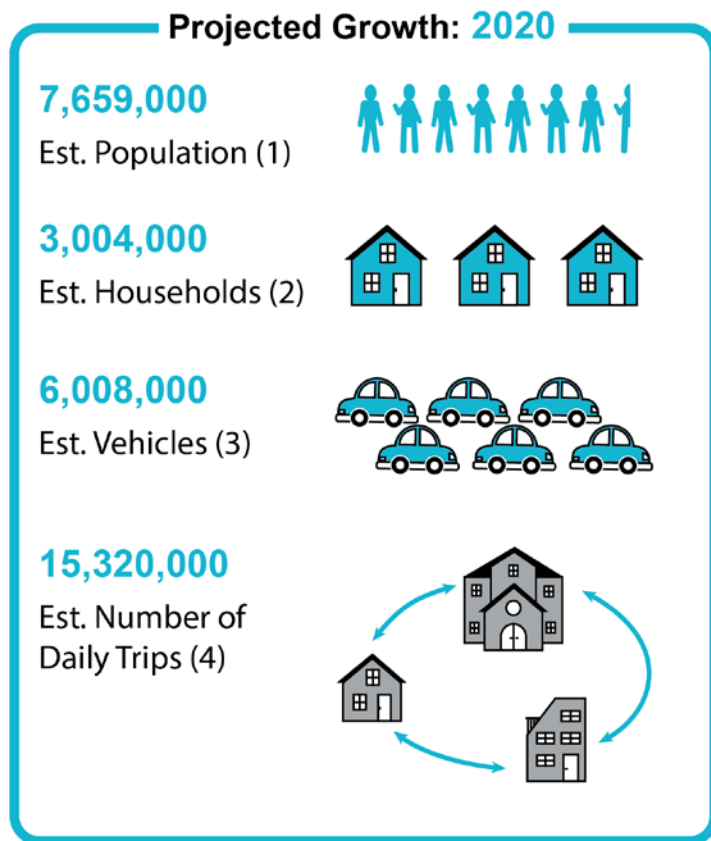


* Pavement Structural Life refers to the foundation of the roadway, which requires maintenance of the top, or wearing surface.

** Pavement Life refers to asphalt wearing surfaces, which should be replaced every 17-20 years.

Projected growth

2020-2060



(1) Estimated Population (based on OFM's November 2019 "State Population Forecast" <https://www.ofm.wa.gov/washington-data-research/population-demographics/population-forecasts-and-projections/state-population-forecast> (2040 - 2060 forecast by WSDOT based on OFM's growth rate between 2030 and 2040)

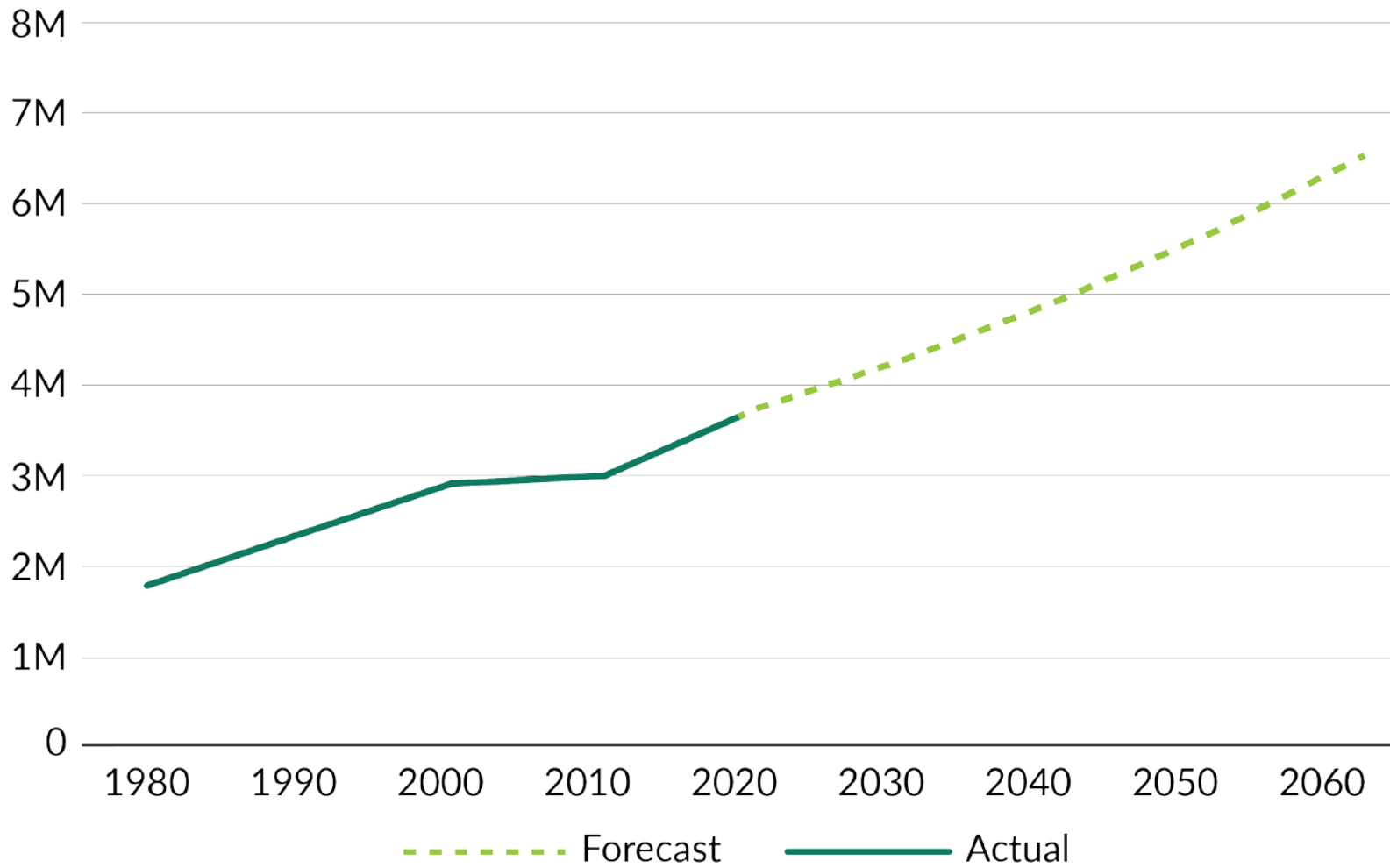
(2) Estimated Number of Households (based on 2.55 persons per household, from <https://www.census.gov/quickfacts/WA>)

(3) Estimated Number of Vehicles (based on 2.0 vehicles per household) from <https://datausa.io/profile/geo/washington>

(4) Estimated Number of Daily Trips per Household (FHWA's 2017 National Household Travel Survey, https://nhts.ornl.gov/assets/2017_nhts_summary_travel_trends.pdf page 22 - table 6c. Trends in the Average Annual Vehicle Trips per Household by Selected Trip Purposes [divided the 2017 Original 1,865 (trips) by 365 (days) = 5.1 trips per household per day] multiplied by the estimated number of households = the number of daily trips)

Employment

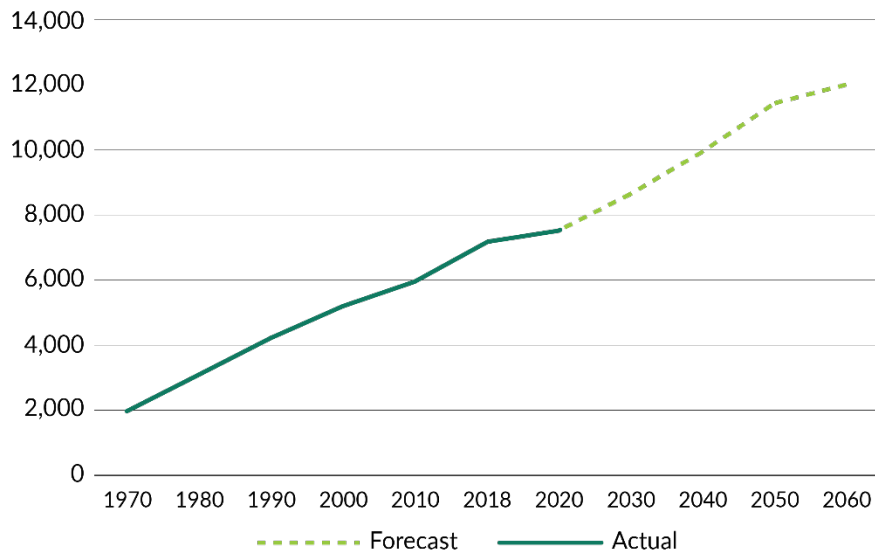
1980-2060 (in millions)



Source: Office of Financial Management, Forecasting and Research Division

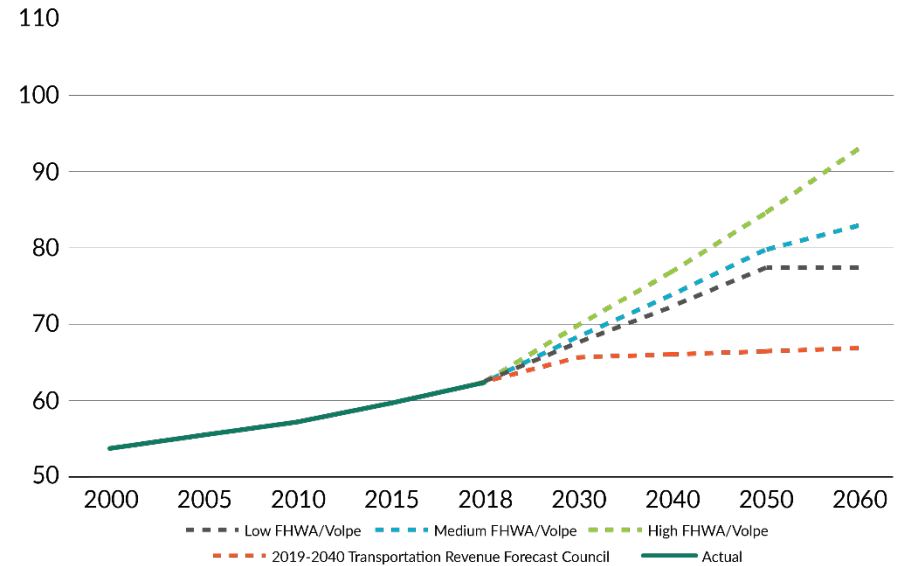
Vehicle Registration

1970-2060 (in thousands)



Vehicle Miles Traveled

2000-2060 ALL PUBLIC ROADS (in thousands)



Source: Vehicle registrations are based on Transportation Revenue Council. Vehicle Miles Traveled are actuals for 2000 – 2018; forecasts are based on Transportation Revenue Council and Federal Highway Administration, Forecasts of Vehicle Miles Traveled, Spring 2019 (Office of Highway Policy Information).



Response to Challenges

Resilience

- Safety and system operation program
- \$6.9 billion system preservation need
 - Highways and bridges
 - Ferries
 - Train sets
 - Facilities and equipment
- \$1.5 billion [bridge retrofit](#) need
- \$3.1 billion [fish passage](#) obligation
- Significant projects
 - [I-5 Columbia River Bridge](#)
 - [US 2 Trestle](#)
 - [SR 18](#)
 - [Complete I-405/SR-167 Master Plan](#)
 - [I-5 System Partnership](#)
- 10-year need, none of this is funded



Response to Challenges

Alternative energy

- [EV charging stations](#)
- [Ferry conversion, new vessels](#)
- [Fleet conversion](#)
- [Clean transit](#) – 386 electric buses in Washington (as of December 2018)
 - WSDOT working with local partners to obtain federal grants to replace diesel with alternative fuel vehicles
- [E-bikes](#), E-scooters

Technology and Innovations

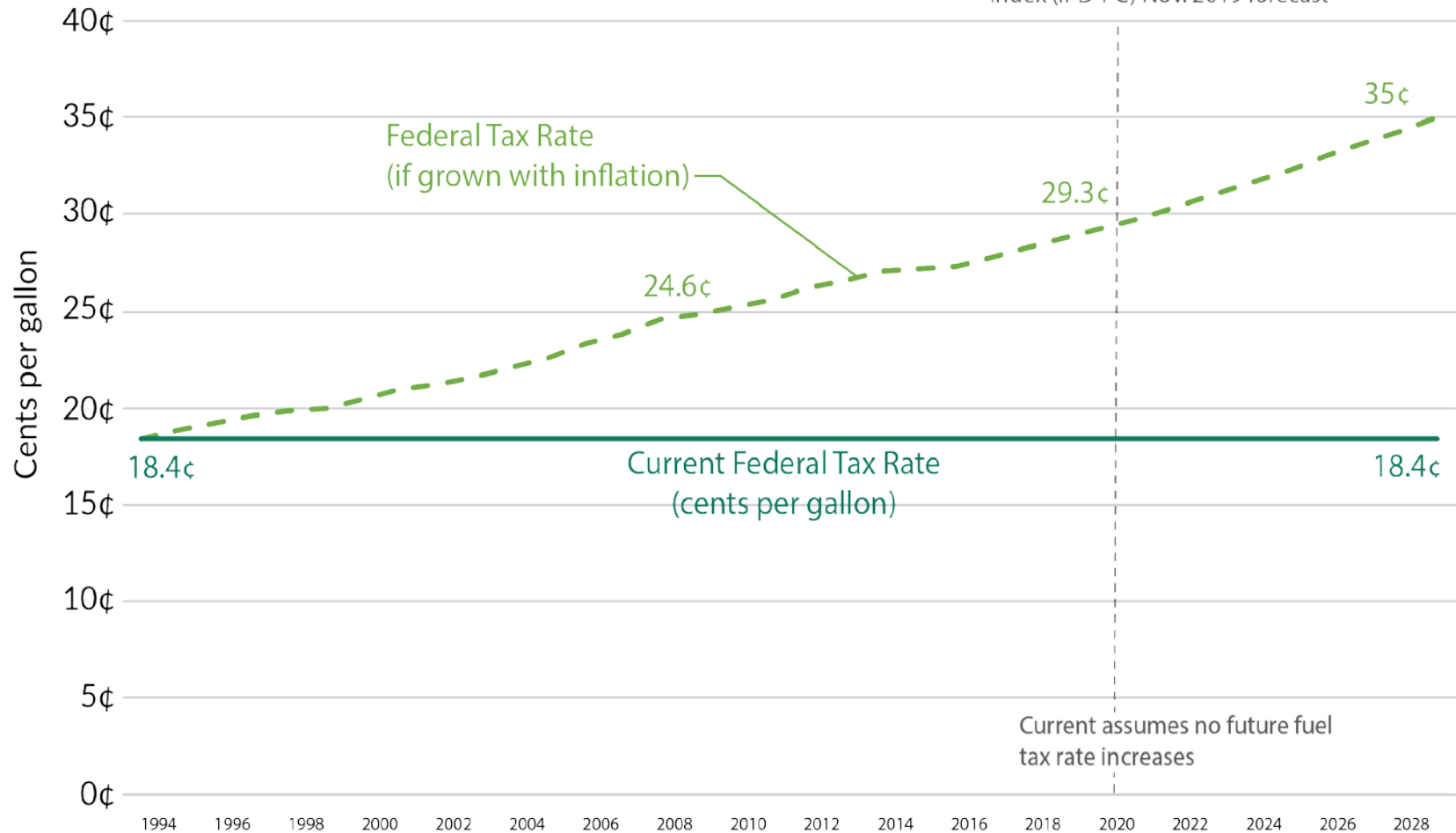
- Transportation System Management and Operations
 - [Cooperative Automated Transportation](#)
 - Mobility on Demand

Response to Challenges

Governance/Financing

Federal Tax Rate If Grown With Inflation Since FY 1994 (cents per gallon)

Inflation based on implicit price deflector
index (IPD-PC) Nov. 2019 forecast



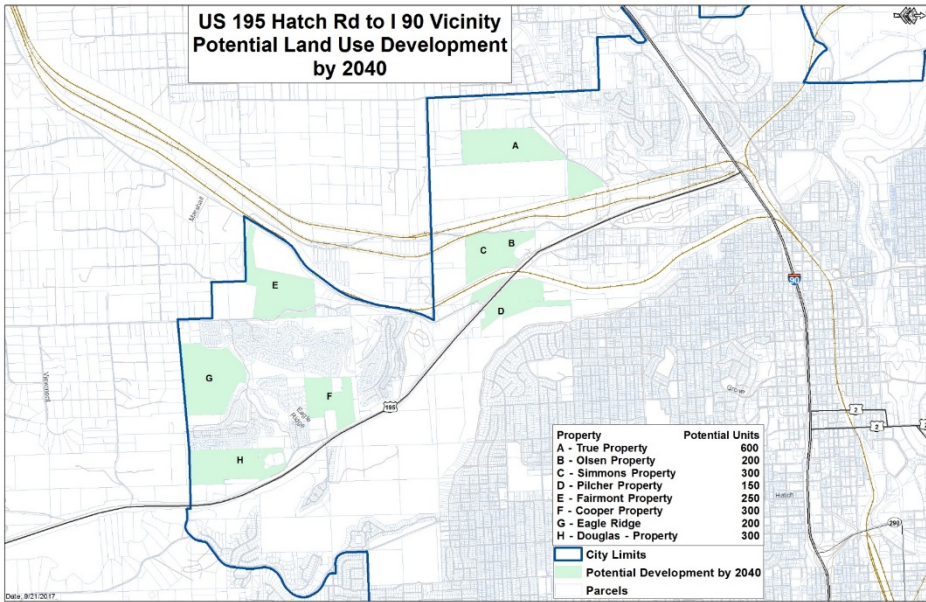
Response to Challenges

Governance/Financing

- [Growth Management Act](#) and State Transportation Facilities

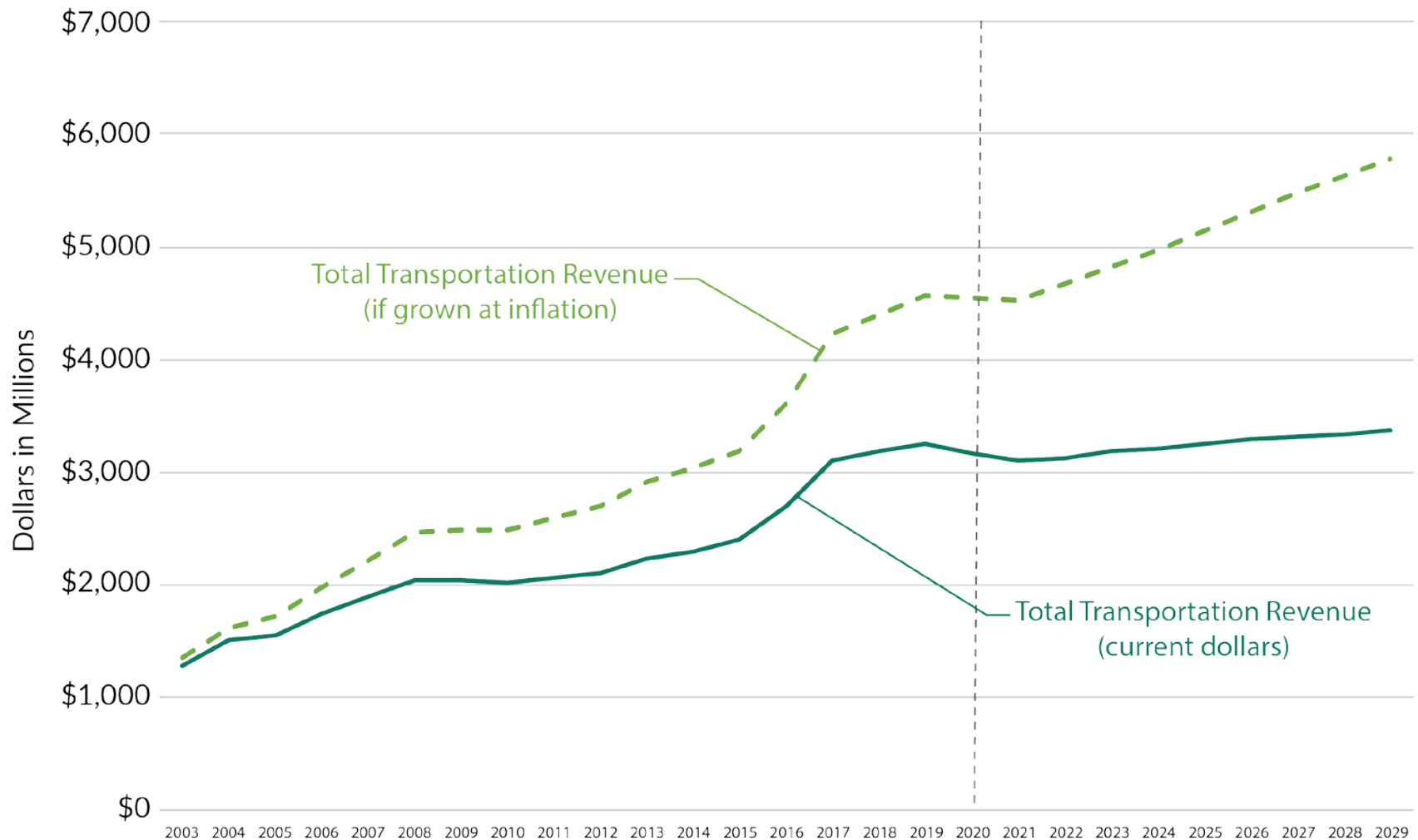
Future of funding

- [Road User Charge](#)
- [Congestion pricing](#)
- [Tolling](#)
- Other?



1999 plans for infrastructure build-out

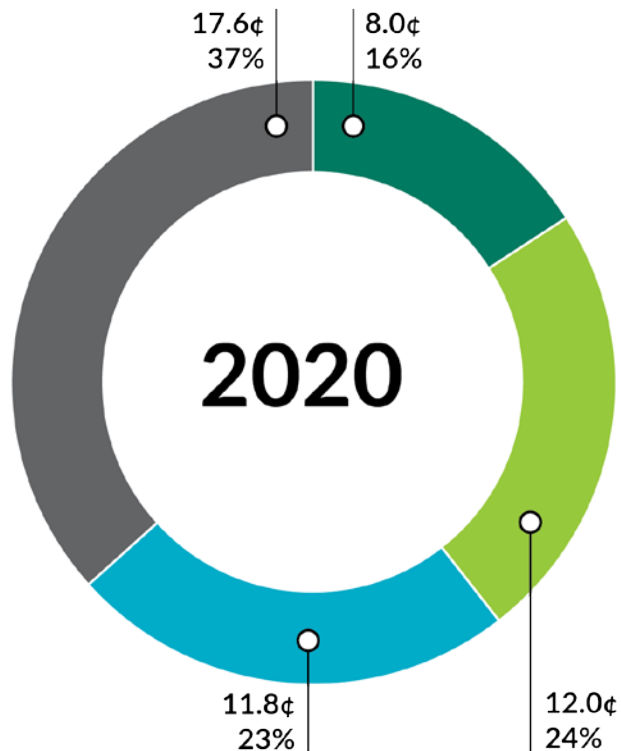
Total Transportation Revenues – Current and Grown at Inflation (\$ millions)



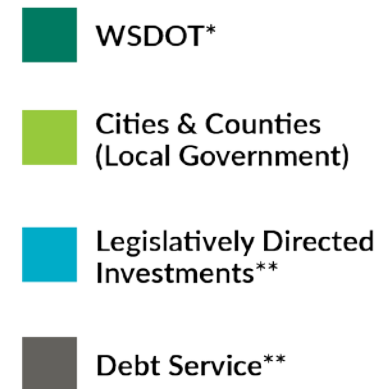
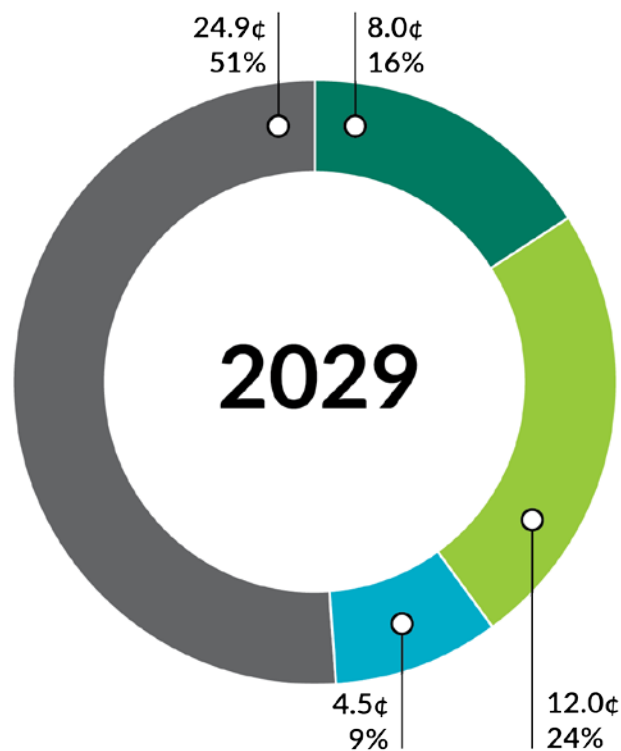
Source: Transportation Revenues based on November 2019 TRFC quarterly Forecast.

Where does the gas tax go?

Where Does the 49.4¢
State Gas Tax Go?



Where Will the 49.4¢
State Gas Tax Go?



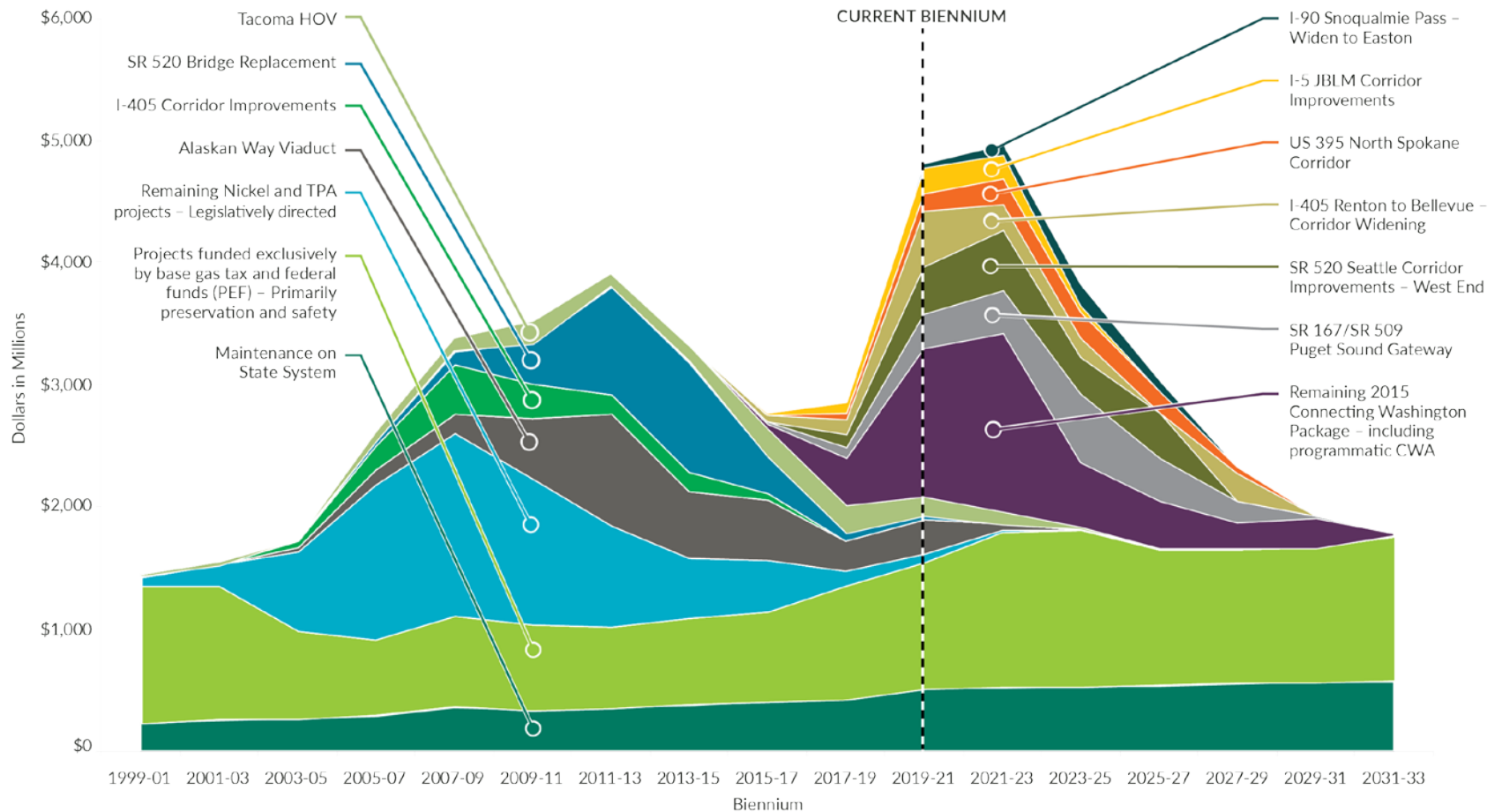
* Includes operations, maintenance, preservation and safety improvements.

** Includes funding for projects specified in the 2003 Nickel, 2005 Transportation Partnership, and 2015 Connecting Washington acts, as well as funding to pay off bonds funded by pre-2003 fuel tax.

WSDOT Highway Maintenance and Construction Programs with Revenue Packages

2020 Governor's Proposed Supplemental Budget

20GOV001 (Excludes sub-programs I6 and I7)



RCW [47.04.280](#)

Transportation system policy goals

- **Economic vitality** – To promote and develop transportation systems that stimulate, support, and enhance the movement of people and goods to ensure a prosperous economy
- **Preservation** – To maintain, preserve, and extend the life and utility of prior investments in transportation systems and services;
- **Safety** – To provide for and improve the safety and security of transportation customers and the transportation system;
- **Mobility** – To improve the predictable movement of goods and people throughout Washington state, including congestion relief and improved freight mobility;
- **Environment** – To enhance Washington's quality of life through transportation investments that promote energy conservation, enhance healthy communities, and protect the environment; and
- **Stewardship** – To continuously improve the quality, effectiveness, and efficiency of the transportation system.

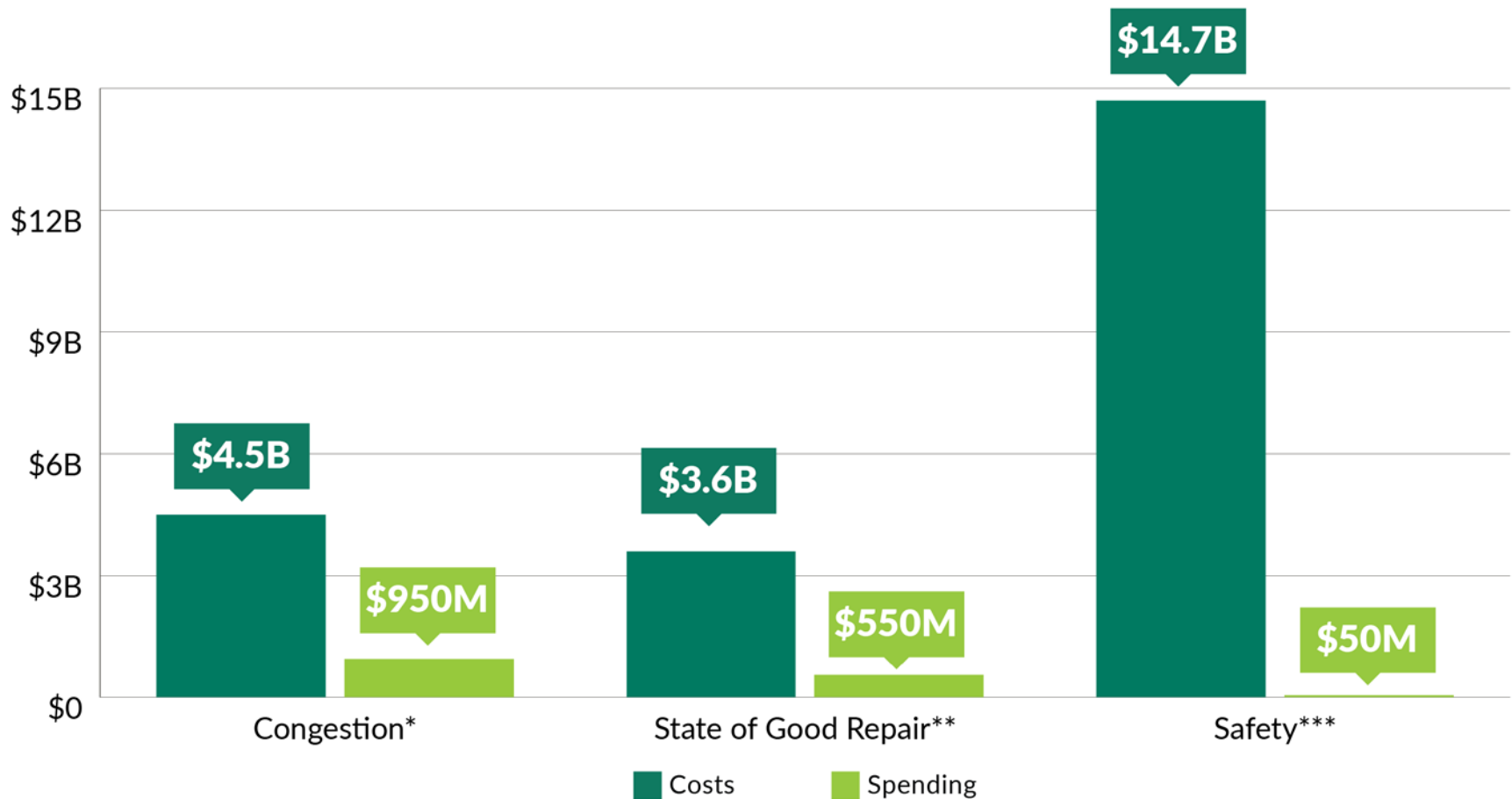
RCW [47.01.078](#)

Transportation system policy goals—Duties.

To support achievement of the policy goals described in RCW [47.04.280](#), the department shall:

- Maintain an inventory of the condition of structures and corridors in most urgent need of retrofit or rehabilitation
- Develop long-term financing tools that reliably provide ongoing maintenance and preservation of the transportation infrastructure
- Balance system safety and convenience through all phases of a project to accommodate all users of the transportation system to safely, reliably, and efficiently provide mobility to people and goods
- Develop strategies to gradually reduce the per capita vehicle miles traveled based on consideration of a range of reduction methods
- Consider efficiency tools, including high occupancy vehicle and high occupancy toll lanes, corridor-specific and systemwide pricing strategies, active traffic management, commute trip reduction, and other demand management tools
- Promote integrated multimodal planning
- Consider engineers and architects to design environmentally sustainable, context-sensitive transportation systems

Cost to Washington's economy



* Congestion cost source: Texas Transportation Institute's 2019 Urban Mobility Report; based on value of travel delay and excess fuel consumption statewide.

** State of Good Repair source: ASCE 2019 Infrastructure Report Card; estimated at \$656 for every Washington driver.

*** Safety source: Societal costs of crashes calculated using methods described in Crash Cost for Highway Safety Analysis (FHWA-SA-17-071), Chapter 6, Federal Highway Administration, Office of Safety, 2018. Economic cost components include: medical care, emergency services, market productivity, household productivity, legal costs, insurance administrative costs, workplace costs, property damage and congestion.

Responsible stewardship – budget structure

Currently WSDOT:

- Responsibly manages public funds as appropriated by the legislature
- Actively seeks efficiencies wherever we can
- Is limited in what we can do given existing project-based budget structure

Future opportunities:

- Consider ways to enable executive and legislative branches to be more nimble, collaborative and responsive to near- and long-term challenges
- Is it time to rethink how we structure the budget that guides how we spend?
 - Today: opportunity to get project on list about every 10 years with new funding package
 - Proposed: Competitive process every biennium means communities would have opportunity every two years

Accountability and transparency

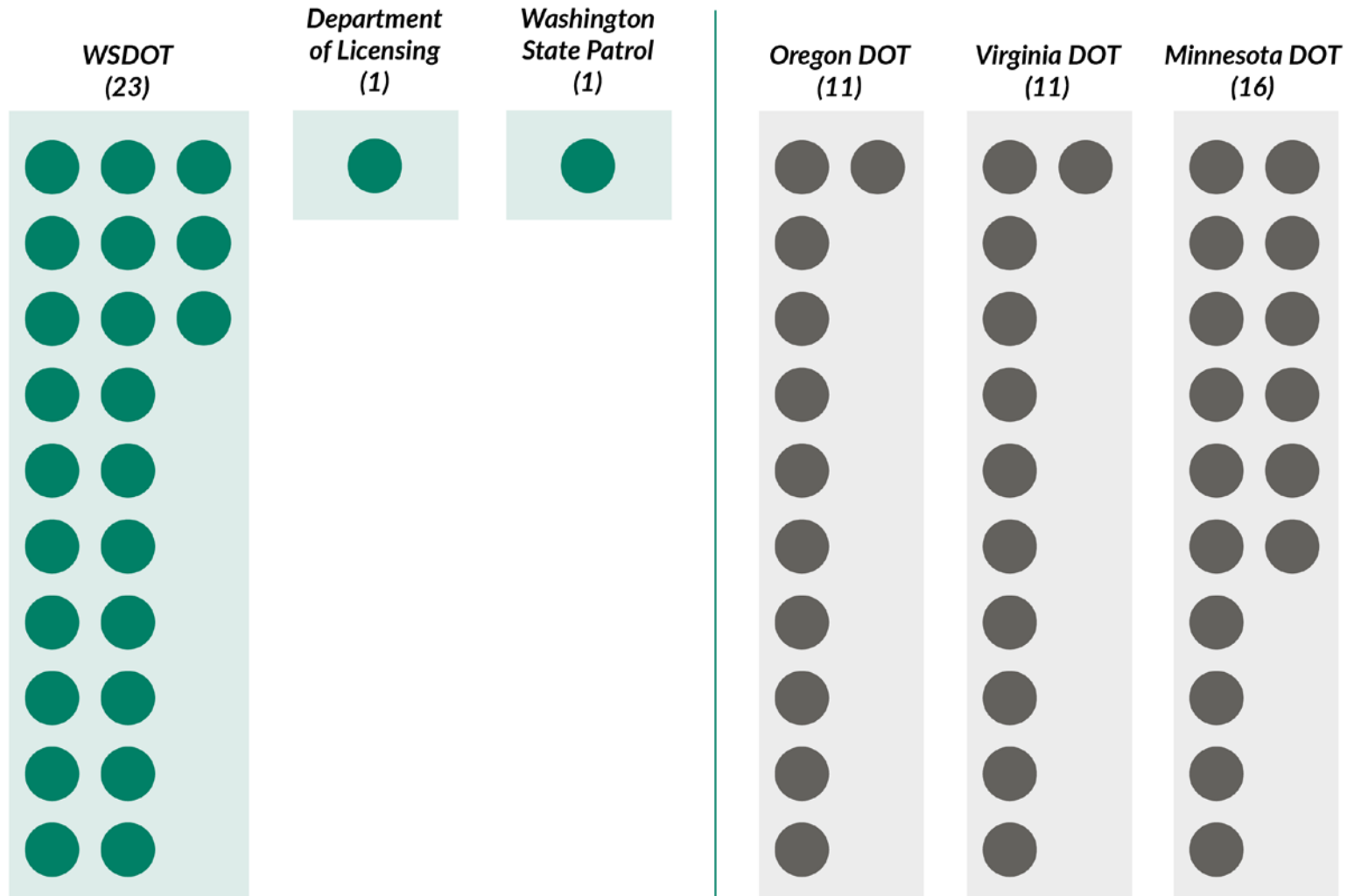
WSDOT is investing limited taxpayer dollars and we understand accountability and transparency is the basis of trust

- We are regularly audited internally, by the State Auditor, by the Legislature, and by the U.S. Department of Transportation
- During the 2017-19 biennium, WSDOT submitted 126 reports directed by the legislature, totaling 5,350 pages (if printed, equals 10 reams of paper)
- Most of these reports are produced quarterly
- Many are duplicative or have been in statue for several years

Recommendation: Welcome an opportunity to consider with legislators and staff how to turn data into actionable information

- Look for opportunities to streamline
- Encourage ongoing usability testing of website with legislators and staff
 - Determine how to best provide legislators information they need
 - Makes information more accessible to everyone who needs it
- Ensure reports are helpful to fulfilling legislative oversight role

Comparison of Budget Programs



Rethinking WSDOT budget

Fix it first – meet our collective responsibility to protect and leverage past taxpayer investment, then invest remaining funds in multimodal system expansion

- Programmatic funding for stewardship of a healthy transportation system
 - Address the Safety, Maintenance, Operation, and Preservation of the system
 - Leverage system management and the deployment of technology to add efficiency and enhance equity
 - Manage demand to optimize user experience at lowest cost
- System expansion important, but it is our least efficient tool
 - Takes years for project to go from idea to proposed project, to planned and permitted, to funded, and finally to construction
 - Stewardship of the existing system has to come first
 - Once stewardship addressed, remaining revenue has to be targeted to expansion investments that actually make a difference to the system

WSDOT “Five Buckets” framework

Bucket Name	Definition
State of Good Repair	Investments that contribute to the physical condition and operational performance of an existing asset
Safety	Investments that improve the overall safety of our multimodal transportation network as defined by Target Zero
Transportation Systems Operations	Investments in system management to maximize the operational efficiency of existing system features
Demand Management	Investments that provide people more choices in how they travel, freeing much needed highway capacity
Focused System Expansion	Investments in system expansion for additional capacity, regardless of mode

10-year unfunded needs to meet policy goals vs current appropriation



* Capital based on 19legfin project list; excluding program v projects; Operating based on 20Gov001

Preservation is needed now to achieve State of Good Repair

- 4,000 lane miles of pavement are due for preservation, another 3,600 are past due, 1600 rated as poor; currently repaving 750 lanes miles per year
- 15 bridges need replacement, 19 need major rehabilitation; 2 are being replaced
- 60 steel bridges are due for painting, 39 are past due; 4 are being painted
- 56 concrete bridge decks are past due for repair, and 30 more are due; 8 are being repaired
- 17 of the 22 Ferry Vessels Have a Preservation Backlog – the average vessel is 28 years old
- More than 20% of the Palouse River and Coulee City (PCC) railway is in poor condition and only capable of 10 MPH operations; of 75 miles in poor condition, 20.8 are being replaced
- 110, or 39%, of WSDOT facilities are more than 50 years old



Asset Management – All WSDOT

(Millions of dollars)	Replacement Value	Average Annual Need	Current plan annual average spending	Average annual funding shortfall
Highways	\$109,390	\$665	\$335	\$330
Multimodal (i.e. Aviation, Public Transportation, Rail)	\$600	\$110	\$20	\$90
Intra-Agency (i.e. IT, Facilities, Fleet, Real Estate)	\$66,480	\$125	\$70	\$55
Ferries	\$4,940	\$340	\$125	\$215
TOTAL	\$181,410	\$1,240	\$550	\$690

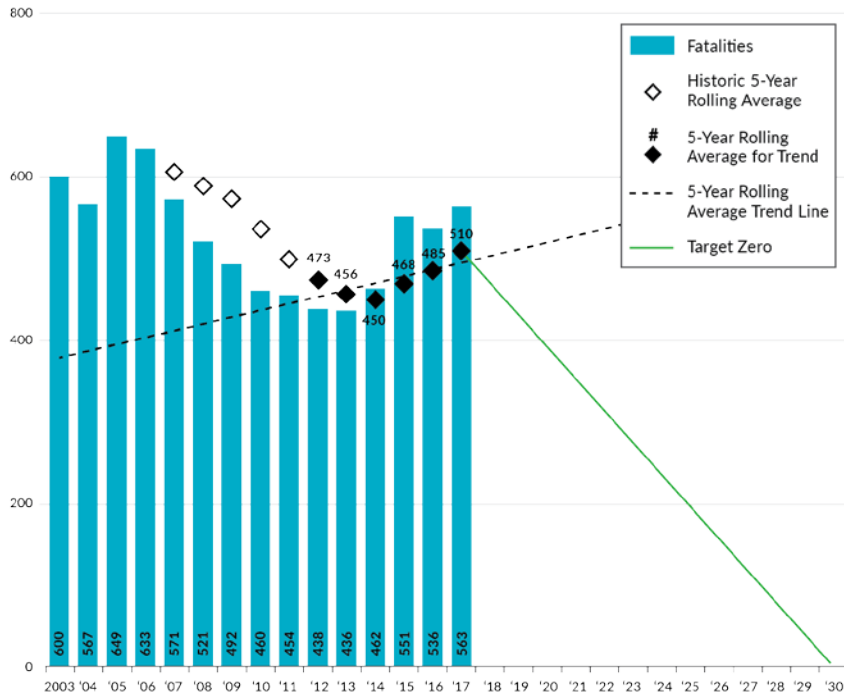
Difficult Trade-Offs



- At current funding levels, and with I-976, WSDOT does not expect to meet federally required 10-year condition targets
- In the current plan, starting in 2021-23 and beyond, WSDOT is no longer investing in:
 - Ramp paving
 - Paving on sections in 40 MPH or lower speed zones
- Strategies are fundamentally about reducing the rate of deterioration – not about improving the condition of infrastructure
- We're not funded to make the right investments at the right time, which increases costs over time

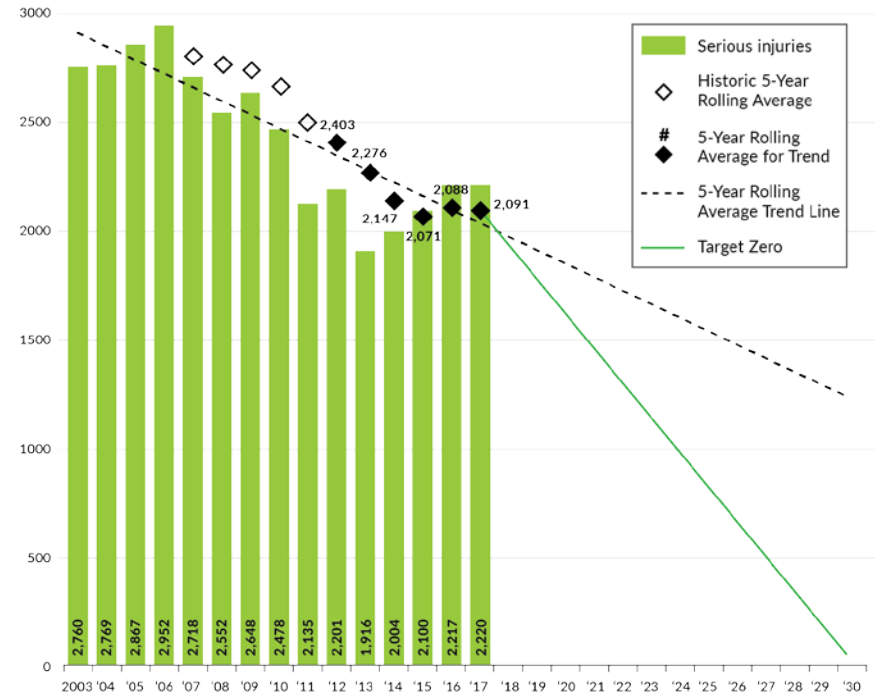
Fatalities and Serious Injuries

Traffic Fatalities in Washington State (2003-2017)



Compared to 2012-2014, traffic deaths **increased 23%** in 2015-2017.

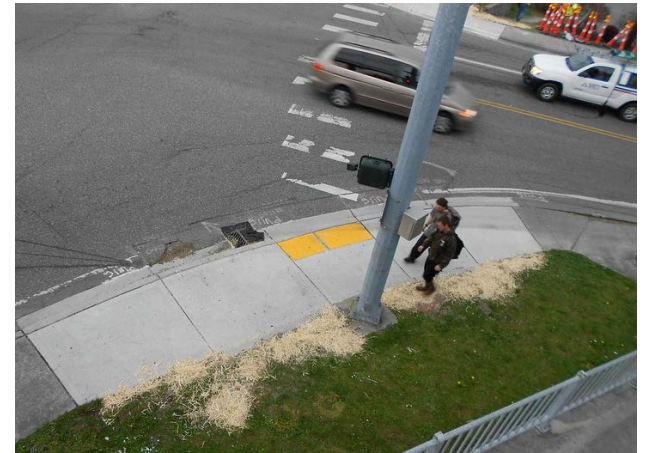
Traffic Serious Injuries in Washington State (2003-2017)



Compared to 2012-2014, serious injuries **increased 7%**. While vehicle miles traveled increased 6%.

WSDOT approach to safety

- Funding for Target Zero-based safety and system operations program should focus on:
 - **Safe Systems** – An approach that recognizes:
 - Safety should not be reduced to move cars faster
 - Roads should be designed to encourage safe behavior
 - Land use decisions should include investment to safely accommodate expected transportation demand
 - **Vulnerable Road Users** – The transportation system should safely accommodate all users:
 - Setting speeds that lower potential for fatalities and injury
 - Providing safe facilities for walking and biking
 - **Enforcement** – Using technology to encourage appropriate behavior



Transportation System Operations

Investments in system management to maximize the operational efficiency of existing system features

Funding: \$86 million/biennium

Unfunded need: \$567 million avg./biennium

Traffic Operations

- Incident Response
- Traffic Management Centers
- Operational Planning
- Asset Management/Major Electrical Systems



Operations Capital Investment

- Pedestrian Crossing Treatments
- Lane Departure Treatments
- Commercial Vehicles Freight System Improvements
- Cooperative Automated Transportation Strategy Development
- Communication Systems, i.e., Operations and Emergency



I-5 and I-405 peak hour performance comparison

I-5 (Northbound at NE 130th St)

Daily Volume: 105,000

Stop and Go Heavy Moderate Freeflow



I-405 (Northbound at NE 85th St)

Daily Volume: 107,000

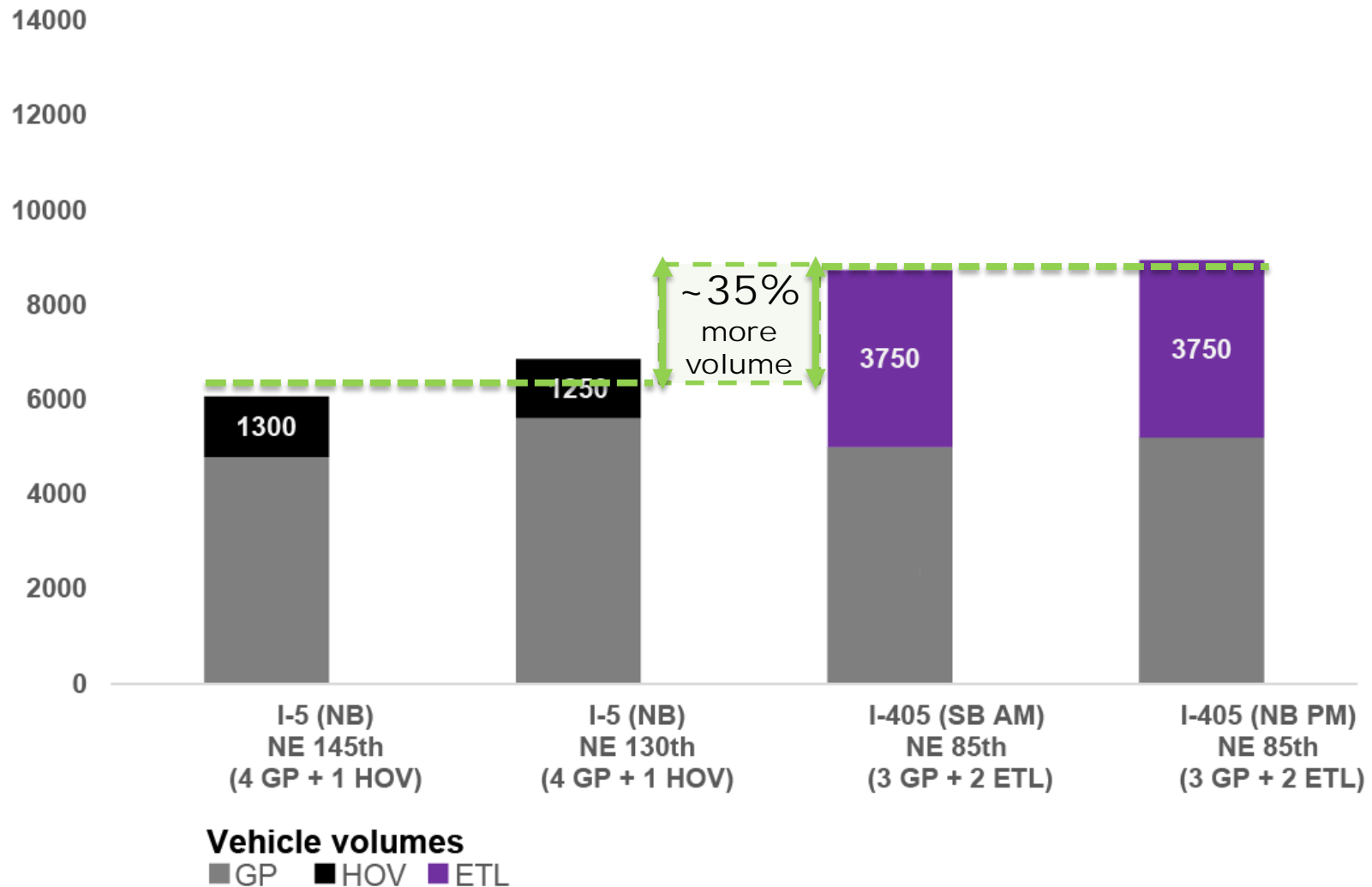
Stop and Go Heavy Moderate Freeflow



Tuesday, July 12, 2017 4:50 p.m.

Tuesday, July 25, 2017 4:30 p.m.

I-405 section with dual express toll lanes moves more vehicles than five-lane I-5 sections with similar daily traffic volumes



Transportation Demand Management

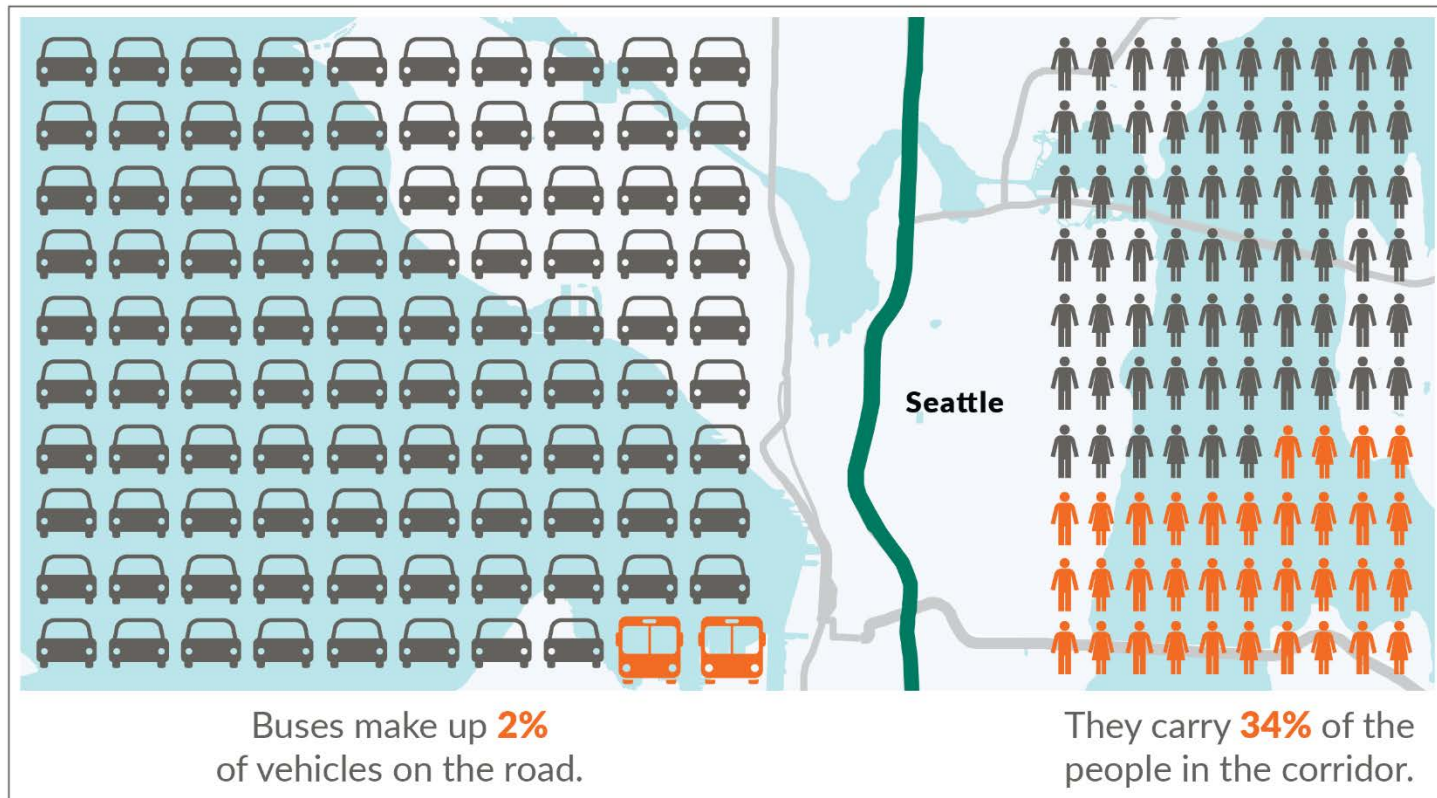
Investments in efficient modes of transportation to provide people choices in how they travel

Transportation Demand Management uses strategies intended to reduce travel demands among modes, times or routes. By providing choices and incentives, TDM strategies relieve pressures on segments of the transportation system.

- Maintains system performance while reducing the use of highway capacity
- Redistributes travel demand in space and time
- Supports people
- Supports placemaking in communities

- Alternative work hours
- Community-based social marketing
- Commute trip reduction programs
- Congestion pricing
- Emergency ride home programs
- Employee incentives
- Mode choice
- Non-motorized facilities and improvements
- Park and ride facilities
- Parking management
- Ridesharing
- Route choice
- Telecommuting
- Transit service and facility improvements
- Trip reduction ordinances
- Shared mobility
- Land use integration
- Local transportation network improvements
- High-occupancy facilities
- Transportation-efficient communities
- Transportation system management

What TDM is currently doing – hidden capacity



Buses contribute added capacity on the I-5 southbound morning commute into Seattle.

Focused system expansion

Investments in system expansion for additional capacity, regardless of mode

Strategic expansion of the system – after trying everything else

- Current efforts
 - JBLM corridor
 - Puget Sound Gateway
 - North Spokane Corridor
- Future efforts
 - I-5 System Partnership
 - High Speed Rail
 - Commercial Aviation Coordinating Commission

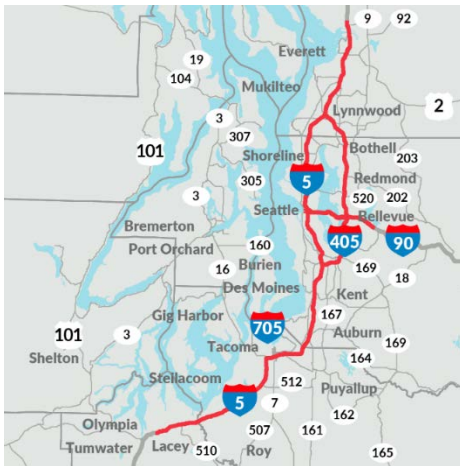


“Solving” Congestion through system expansion

If we could add enough lanes to build our way out of congestion — what would that look like?

Total additional interstate miles needed to drive posted speed limit at all times:

- 451 lane miles at an estimated cost of \$115 billion
- Depending on timing and percent bonded, would require a \$2.20 to \$2.50 gas tax increase



Greater Puget Sound area

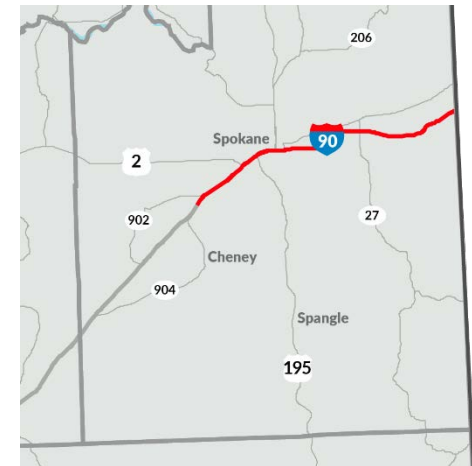
(Olympia to Marysville/Seattle to Issaquah)

- 385 new lane miles
- Maximum of four additional lanes in each direction in select locations within the Central Puget Sound



Vancouver area

- 38 new lane miles



Spokane area

- 28 new lane miles

Working with transportation partners

WSDOT has multiple partners – often unsung heroes helping us with local projects that make a real difference in how state facilities work

- Competitive projects – evidence based, grounded in funding realities:
 - How much can we realistically count on from local, state, federal, tribal funding sources?
 - Prioritization for funding should be based on system need, not asset ownership
 - Grounding in data ensures we are investing limited dollars in areas where drivers, freight, transit and other modal users will see the most benefit
 - Data driven decisions can provide more certainty that projects get a green light and move forward
- Creates a funding structure that supports innovation and flexibility for those who use the system – all of us!

What's next? Ongoing planning

WSDOT's job is to provide data and work with partners to inform investment decisions. There are immediate, mid-term and long-term efforts:

JTC Study – Legislatively directed, 10 year, comprehensive assessment of statewide transportation needs and priorities

- As part of statewide needs/priorities assessment, will develop a menu of funding options

Highway System Plan update – Blueprint for preserving, maintaining, improving and operating state-owned roads for next 20 years

- Legislative mandate (RCW 47.06.050)
- Recommends funding levels for programs, instead of project lists
- Collaboration with partners to develop scenarios, analyzing how different investment strategies affect system performance. Address all highway uses, modes
- Plan will be complete in 2021

Investment Strategy – Our long-term vision is to be so well aligned with our partners that we have a unified transportation investment recommendation to the Legislature. In the meantime, we will work to:

- Align the statewide plans with regional plans, and statewide plans with each other
- Bring the planning work together to meaningfully inform investment decisions
- Our goal: state and regional plans are the basis for Legislative appropriation decisions

What's next? Funding resources

Existing

Gas Tax

- Restricted to “highway” purposes
- Increasing percentage going to debt service
- Diminished collections with fuel efficiency and de-carbonization of system

Motor vehicle fees

- Subject to outcome of Initiative 976

Tolling

- Allows us to fund and expedite construction
- Generates revenue for ongoing costs of operations, maintenance and preservation
- Gives us the opportunity to build new infrastructure
 - Second Tacoma Narrows bridge
 - SR 520 floating bridge replacement
 - Alaskan Way Viaduct replacement
 - Puget Sound Gateway program
 - I-405/SR 167 corridor improvements

What's next? Funding resources

Potential

Road Usage Charge

- RUC pilot project demonstrated the mechanics of RUC
- Other states (Utah, Oregon) ahead of us in deployment
- Still have work to do to determine if/how to implement such a program in Washington

Congestion Pricing

- Lessens SOV traffic and incentivizes use of other modes
- A form of demand management that will grow more in importance in years to come
- Other states (California, New York) ahead of us in deployment
- Still have work to do to determine if/how to implement such a program in Washington

Public Private Partnerships

- WSDOT works robustly with the private sector
- Public Private Partnerships usually offer financing rather than funding
- Other countries (Australia) and states (Indiana, Virginia) ahead of us in deployment
- Still have work to do to determine if/how to implement such a program in Washington

Conclusion

- The decisions we make today will determine our economic, environmental, quality of life, and equity outcomes for tomorrow
- We have an opportunity to plan for our future growth and develop a more sustainable transportation system
- A look ahead suggests fundamental change needed
 - New demands
 - New revenue
 - New program-based delivery structure
- Washington's transportation challenges are large, but not insurmountable. We're well positioned for change. Now's the time to get started.

We are up to this!

Questions?

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